PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Shigehiro YAMAGUICHI, et al.		
Application No.:	10/525,221	Group Art Unit:	1626
Filing Date:	January 18, 2006	Examiner:	Joseph R. Kosack
Title:	CONDENSED POLYCYCLIC Π-CONJUGATED ORGANIC MATERIAL INTERMEDIATE PRODUCT THEREFOR, AND METHOD OF MANUFACTURING CONDENSED POLYCYCLIC Π-CONJUGATED ORGANIC MATERIAL		
Attorney Docket:	12480-000098/US		

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314
Mail Stop AF

Date: October 5, 2009

REQUEST FOR PRE-APPEAL BRIEF CONFERENCE

Sir:

In response to the Final Office Action mailed on May 4, 2009 ("Final Office Action") and the Advisory Action mailed on September 25, 2009 ("Advisory Action"), Applicants request that the Pre-Appeal Brief Review Board (hereinafter Board) review the pending rejections. The Reasons for Pre-Appeal Brief Request for Review are being filed concurrently with the Pre-Appeal Brief Request for Review and a Notice of Appeal.

Claims 1-12 are pending in the current Application. Claims 1-3 and 8-12 are withdrawn claims. Claims 4-7 are currently rejected, with claim 4 being in independent form.

Rejections for which Conference is Requested

A Pre-Appeal-Brief Conference is requested to review the rejection of claims 4-7 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Initially, please refer to Applicant's arguments on pages 15-17 of the September 4, 2009, Amendment.

Previous Rejections under 35 U.S.C. §112

Claims 4-7 were previously rejected under 35 USC §112, second paragraph, as being indefinite. This rejection is respectfully traversed.

The Examiner has requested a definition of the term "*number average polystyrene-equivalent molecular weight*," such that a person of ordinary skill in the art would know the meets and bounds of the invention. Applicant asserts that the term "number average polystyrene-equivalent molecular weight," used in claim 4, is an accurate quantitative measure of the molecular weight distribution for synthetic polymers that is determined via size exclusion chromatography. Applicant has previously submitted, in an IDS submittal filed February 2, 2009, a 1989 publication *Size Exclusion Chromatography* by John V. Dawkins of Loughborough University of Technology, UK, which describes size exclusion chromatography. Page 251 of the publication (which has been included on the last page of this document, for your convenience) shows the equation for number average molecular weights (M_n, shown in Equation 30), which is a dimensionless value synonymous with the recited "number average polystyrene-equivalent molecular weight." Applicant asserts that a person of ordinary skill in the art would understand this term, such that recited claims 4-7 are definite as they particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Therefore, Applicant respectfully requests that the rejection of these claims under 35 U.S.C. §112 be withdrawn.

Current Rejections under 35 U.S.C. §112

Claims 4-7 stand rejected under 35 USC §112, second paragraph, as being indefinite. This rejection is respectfully traversed.

For at least the reasons stated above, Applicant believes that the claims are definite as they particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

CONCLUSION

In view of the above remarks, Applicants request the Pre-Appeal Brief Conference to find in favor of Applicants' positions and arrange for withdrawal of the above-noted rejections, culminating in the sending of a Notice of Allowance of the pending claims.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-2025 for any additional fees under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

HARNESS, DICKEY, & PIERCE, P.L.C.

By:

Donald J. Daley, Reg. No. 34,313

P.O. Box 8910
Reston, Virginia 20195
(703) 668-8000

DJD/CES:vrj

From the normalized distribution $w(M)$, in equation (28), the number, viscosity, and weight average molecular weights, $\bar{M}_n$, $\bar{M}_v$ and $\bar{M}_w$ respectively, are calculated from the relations

$$\bar{M}_n = 1/\int (1/M)w(M)\,dM \qquad (30)$$

$$(\bar{M}_v)^a = \int M^a w(M)\,dM \qquad (31)$$

$$\bar{M}_w = \int M\,w(M)\,dM \qquad (32)$$

Here, a is the exponent in the Mark–Houwink dilute solution viscosity equation

$$[\eta] = K\bar{M}_v^a \qquad (33)$$

where K is a constant. To demonstrate how the eluent velocity, and therefore mass transfer dispersion, influences the precision of average molecular weights, Dawkins and Yeadon[72] determined the molecular weight distribution of a broad distribution polystyrene as a function of u and computed values of $\bar{M}_w$ and $\bar{M}_n$ from the distribution obtained at each flow rate. The fall in $\bar{M}_w/\bar{M}_n$ (of about 5%) as u decreases is shown in Figure 20 confirming the prediction of equation (24). Procedures for estimating mobile phase dispersion with equations (23) and (24) have been discussed,[74,75] so that it is possible to calculate $[\bar{M}_w/\bar{M}_n]_T$ from the experimental dependence of H, or $[\bar{M}_w/\bar{M}_n]$, on u. Values of $[\bar{M}_w/\bar{M}_n]_T$ calculated from data for H for polystyrene standards are in reasonable agreement with theoretical values predicted for polystyrene from a 'living' anionic polymerization.[74]

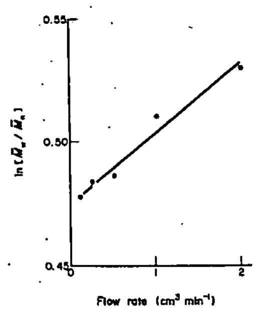

Figure 20 Dependence of measured polydispersity ($\bar{M}_w/\bar{M}_n$) of polystyrene on eluent flow rate (reproduced with permission of Butterworth Ltd. from ref. 72)

Figure 1 indicates that the chromatogram for a monodisperse solute is not a rectangle but a bell-shaped peak, so that a polydisperse polymer having a range of solute sizes generates a chromatogram which is a collection of a large number of overlapping peaks. The distribution $w(M)$ calculated with equation (28) is then broader than the true molecular weight distribution (see Figure 19). Because of dispersion mechanisms, the tails of the chromatogram result from the broadening alone and the solute concentration at a given retention volume depends on the component eluting at V_R and on the broadening contributions from neighbouring components. If the experimental chromatogram is represented by $F(V_R)$ and if $w(Y)$ represents the ideal chromatogram in the absence of broadening, *i.e.* as H tends to zero, then these two functions are related by the equation proposed by Tung[111]

$$F(V_R) = \int w(Y)G(V_R, Y)\,dY \qquad (34)$$

[redacted]